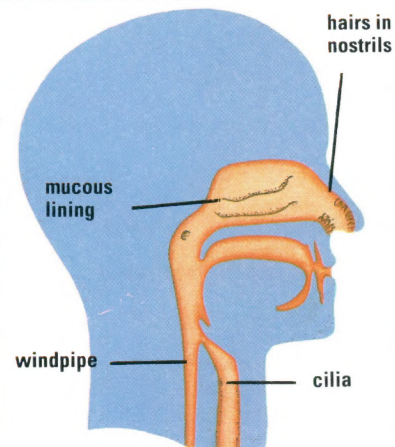


# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- ❑ How does the environment affect health?
- ❑ The latest medical techniques
- ❑ Diagnosis by computer
- ❑ Inside the operating theatre
- ❑ Cutting out diseased tissue with specialized lasers
- ❑ AIDS – when the immune system breaks down
- ❑ How the body fights disease

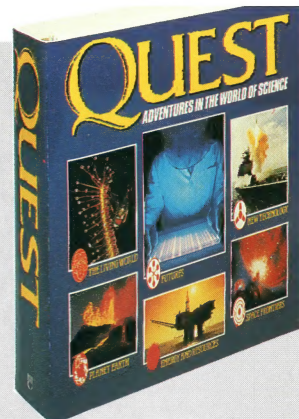
## First Defences





# QUEST

## CONTENTS 23



### HEALTH WATCH

85-88

Keystones of good health – the body's defences – the importance of diet – smoking and lung cancer – effect of environment on health – pollution – sick building syndrome

### THE LIVING WORLD

#### GERM WARFARE

93-96

The immune system – killer blood cells – immunization – types of germ – 'good' and 'bad' bacteria – invasive viruses – deadly protozoa – harmful fungi



### NEW TECHNOLOGY

#### SURGERY NOW

131-134

Modern anaesthetics – sterile kit – specialized lasers – precision surgery – treating tumours – endoscopes – reconnecting severed limbs – organ transplants – plastic surgery

#### MEDICAL MIRACLES

135-136

Restoring sight – hearing implants – heart pacemakers – controlling diabetes – replacing damaged joints

#### LIFESAVING MACHINES

137-140

Uses of X-rays – scanners that see inside the body – medical lasers – kidney dialysis – heart and lung machines

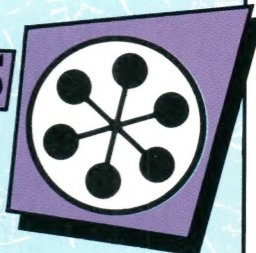


### FUTURES

#### PROGRAMMED FOR HEALTH

77-78

The electronic doctor – diagnosis by computer – 'keyhole surgery' by robots – hi-tech cancer treatments – making maps of inside the body – charting brain activity

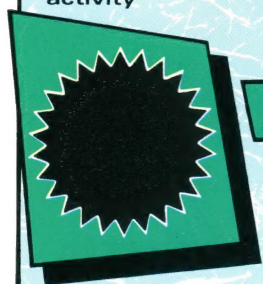


### ENERGY AND RESOURCES

#### HEALING FORCES

73-74

Pain killers – specific and broad spectrum antibiotics – problem of side effects – complementary medicine – holistic approaches



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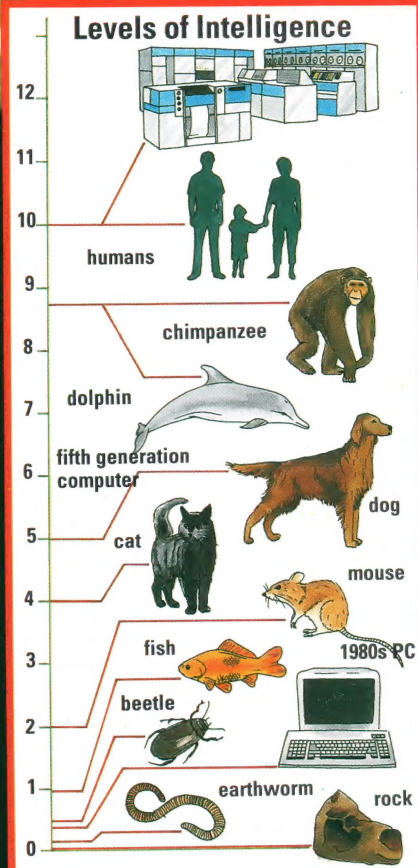
**SOUTH AFRICA & MALTA:** Back numbers are available through your newsagent.



# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- ☐ The race to build the fastest machine
- ☐ The electronic 'village'
- ☐ How do computers store information?
- ☐ The transport revolution
- ☐ Machines with minds?
- ☐ Computerized navigation systems

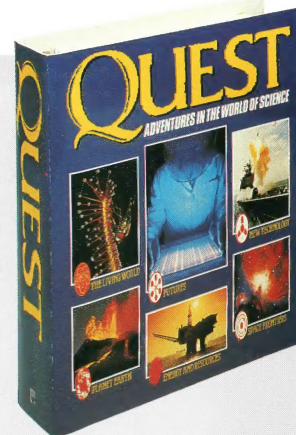


# COMPUTERS 24



# QUEST

## CONTENTS 24



### PLANET EARTH

#### GLOBAL VILLAGE

89-92

The electronic 'village' – worldwide communications network – security problems – computer viruses – malicious hackers – hostile programs

### NEW TECHNOLOGY

#### ROBOTICS

141-144

Teaching robots their jobs – automated assembly line – camera 'eyes' – androids – synthesizing the human voice – brainy computers

#### MEMORY BANKS

145-146

Computer storage systems – bits and bytes – built-in programs – losing info – back-up systems – hard and soft discs

#### MULTI-MEDIA

147-150

Advanced programming techniques – hi-tech graphics and animation – ray tracing – digital picture manipulation – on-line poetry



### FUTURES

#### SUPERCOMPUTERS

79-80

Ten billion calculations per second – ever-faster speeds – programs that mimic the brain – simulating accidents – mapping air flow

#### THE FIFTH GENERATION

81-82

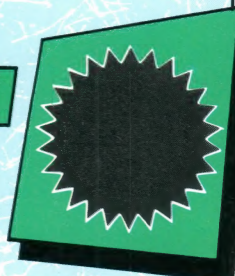
Silicon chips – thousands of transistors – supercooled superconductors – the optical computer – pulses of light

### ENERGY AND RESOURCES

#### SUPER CIRCUITS

75-78

Active suspension systems – in-car navigation – safer cornering – global satellite network – computer pilots – stabilizing superlight military jets



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**Pack cover:** Mission control at the Jet Propulsion Laboratory, California, USA; the flow of air around a car as modelled by a Cray supercomputer. **Fact file cover:** impression of a worldwide communications network; diagram of different levels of intelligence.

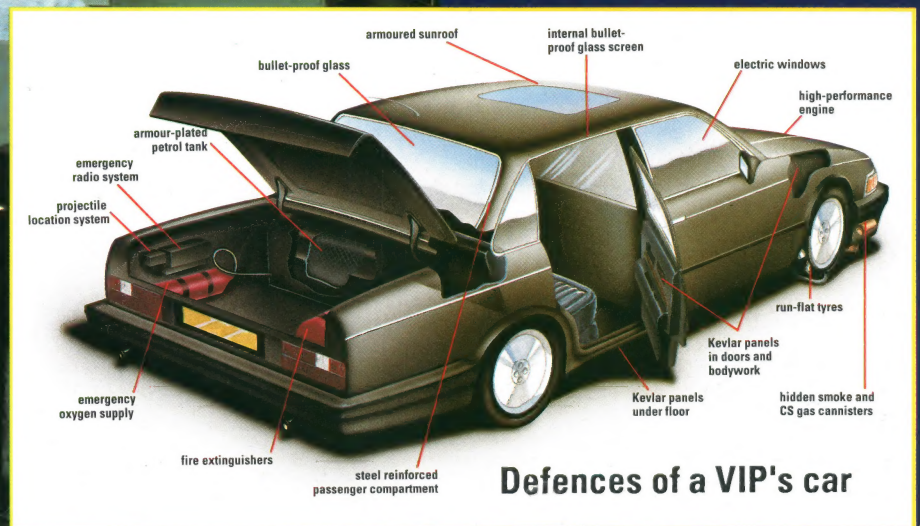
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# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- Star Wars – the changing story
- Animal survival strategies
- Human responses to danger
- Sophisticated bomb 'sniffers'
- Inside the core of a nuclear reactor



**Defences of a VIP's car**

- The rising rate of computer crime
- Safeguarding radioactive materials

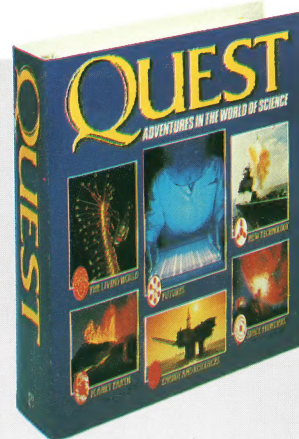
# SECURITY

# 25



# QUEST

## CONTENTS 25



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### PLANET EARTH

#### NATIONAL SECURITY

93-96

Natural and man-made boundaries – frontiers –  
illegal immigrants – air space

### THE LIVING WORLD

#### SELF DEFENCE

83-84

The body's response to danger – martial arts –  
forbidden moves – skill rating system

#### THE FIGHT TO SURVIVE

97-100

Staking out territory – survival strategies –  
hunting in packs – camouflage



### NEW TECHNOLOGY

#### TECHNOLOGY V TERROR

151-154

Airport security – electronic detection –  
armoured cars – bank vaults

#### COMPUTER WATCH

155-156

Bank fraud – stealing data – hacking – the  
password – sharing secret information

#### GLOBAL DEFENCE SYSTEM

31-32

'Star Wars' – early warning satellites –  
meteorite catastrophe – Clementine Probe

### FUTURES

#### UNDER SURVEILLANCE

83-84

Electronic tagging – tapping telephones –  
spying – recognition systems – bugs

### ENERGY AND RESOURCES

#### NUCLEAR SAFETY

79-80

Dangers of fission – splitting atoms –  
transporting nuclear waste – terrorist threat

**Pack cover:** a bank vault with the door open (main image); publicity material from a computer company advertising the security of its systems.

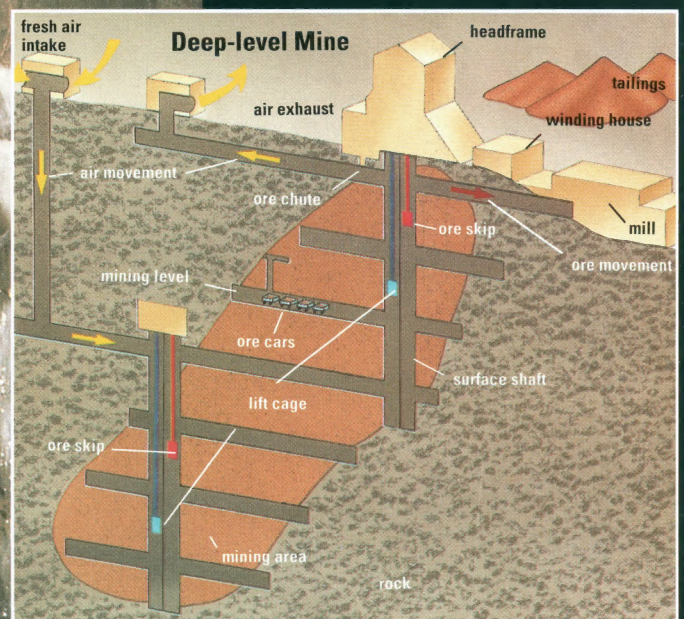
**Fact file cover:** monitoring by computer the stripping down of spent fuel rods at a power station;



# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- ❑ Secrets of the centre of the Earth
- ❑ Lava-flow devastation
- ❑ Earthquake lights
- ❑ Animals that live in the earth
- ❑ The underground city of the future
- ❑ The Guardian Angels
- ❑ Drilling for oil



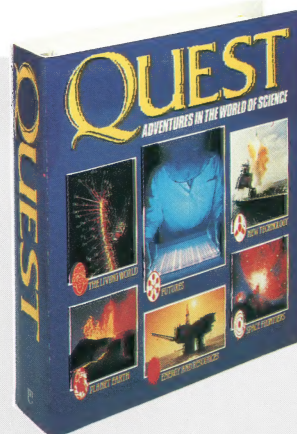
- ❑ Methods of mining

**UNDERGROUND 26**



# QUEST

## CONTENTS 26



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## PLANET EARTH

### TO THE EARTH'S CORE

97-100

The mantle – Reflection seismology – stalactites and stalagmites – five types of volcano – geysers and fumaroles

### EARTHQUAKE!

101-104

The longest quake – fault lines – the epicentre – tsunami – seismograms – satellite monitoring – the Richter Scale

## THE LIVING WORLD

### THE UNDERWORLD

101-104

Nitrifying bacteria – the world of worms – digging claws and teeth – burrows and tunnels – living in darkness

## NEW TECHNOLOGY

### SUBWAY

157-160

Signalling systems – driverless trains – world's largest station – 'steel on steel' – Eurotunnel – deep lines – beating crime

## FUTURES

### DOWN TOWN

85-86

Underground building – 'Earth-sheltered' technology – NORAD – Geofrontier project – earthquake-proofing – The Granite Vaults

## ENERGY AND RESOURCES

### MINING THE EARTH

81-84

Coal reserves – environmental pollution – the deepest mine – how diamonds form – bucket-wheel excavators – blasting

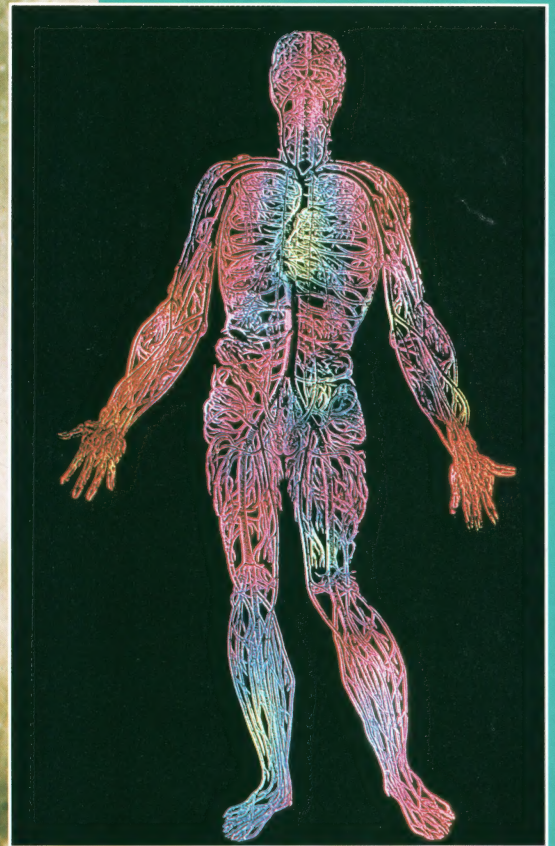
**Pack cover:** the Paris Métro (main image); an eruption of Mt Kilauea on Hawaii. **Fact file cover:** abseiling down an underground waterfall; cross-section of a deep-level mine (inset).



# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- Q Human dynamos
- Q Creatures of power
- Q Overtraining syndrome
- Q Adrenalin: the danger hormone
- Q How much sleep do you need?
- Q What causes stress
- Q Diet: key to health

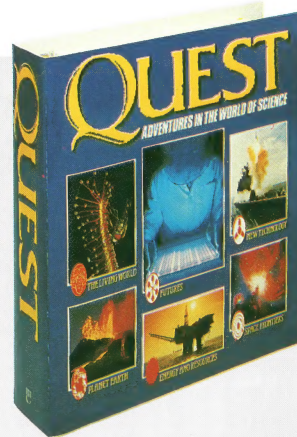


**BODY MACHINE 27**



# QUEST

## CONTENTS 27



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## PLANET EARTH

### SUPERMEN

105-108

Muscle types – world-class material – mental attitude – sport psychologists – aerobic and anaerobic breathing – oxygen debt – preventing 'burn out'

### ADAPT OR DIE

109-110

Evolutionary forces – human skin colour – prehensile tails – Arctic adaptation – gliding animals – desert creatures – fooling predators – insect mimicry

## THE LIVING WORLD

### HUMAN MACHINES

105-108

Physical prowess – how blood circulates – involuntary muscles – design of the heart – body's shock absorbers – receptors – Siamese twins – coma

### RAW POWER

109-112

Might of the dung beetle – killer croc – fastest animals – undersea poisoners – ink clouds and tentacles – how snakes swallow – stink glands

## NEW TECHNOLOGY

### BODY PARTS

161-162

Man-made joints – skin electrodes – touch sensors – a cure for deafness? – bionic ear implants – tungsten carbide bones – artificial skin

## ENERGY AND RESOURCES

### BODY MAINTENANCE

85-88

A balanced diet – weight control – calories – exercise – protein and carbohydrate – meditation and relaxation – body repairs while you sleep

### STRESS: THE KILLER

89-90

Fight or flight response – pain gate phenomenon – addicted to thrills – a surge of adrenalin – body breakdowns – drug treatments – panic attack

**Pack cover:** A body-builder flexes his muscles; false-colour, X-ray image of human arteries (inset). **Fact file cover:** A charging African elephant; false-colour version of an engraving of the venous system.

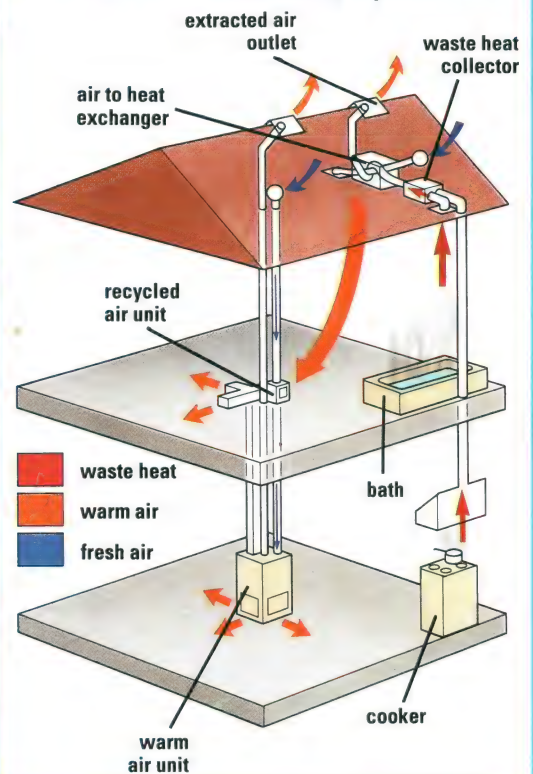


# QUEST

## ADVENTURES IN THE WORLD OF SCIENCE

- ❑ Luxury caravans
- ❑ Ultrasound cleaning
- ❑ Computer-controlled living
- ❑ Inside the beehive
- ❑ Decompression chambers
- ❑ Devastation by earthquake

### Advanced Central Heating System





# QUEST

## CONTENTS 28



### PLANET EARTH

#### GOING PLACES

111-114

Nomadic tribes – yurts and teepees – luxury caravans and campers – the Nullarbor-crosser – floating villages – mobile homes – ocean-going boats – 'cardboard city'

#### POWER CLEANING

115-116

Dust mites – cleaning machines – how detergents work – ultrasound cleaning – biological powders – grime-busting enzymes – biodegradable foam – inside your toothpaste

#### CATASTROPHE!

117-118

Tracking Hurricane Hugo – shanty town destruction – building in earthquake zones – search and rescue – flooding – when lightning strikes – the quake baby

### THE LIVING WORLD

#### ANIMAL STRONGHOLDS

113-114

Security from predators – social insects – underground store houses – inside the beehive – burrows and mounds – the beaver's lodge – secrets of the cuckoo – the hornet's nest

#### CREEPY-CRAWLIES

115-118

Viruses, bacteria and fungi – bad fruit and rotting meat – the smell of decay – air-borne mould – dry-rot fungus – cockroach infestation – bedbugs and fleas – the living fossil

### NEW TECHNOLOGY

#### HOME FROM HOME

163-166

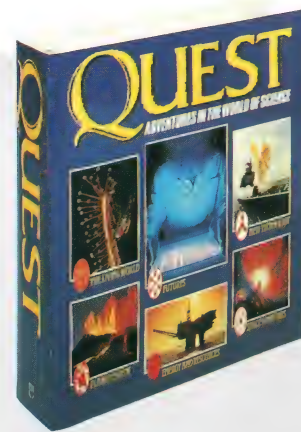
Life on an oil rig – decompression chamber – aboard an aircraft carrier – living underwater – travelling in Voyager – SAS survival training – inside a lorry driver's cab

### FUTURES

#### DESIGNS FOR LIVING

87-90

Shape of tomorrow's homes – controlled environments – the plastic house – energy efficient houses – solar panels – heat pump central heating – soil insulation – video phones



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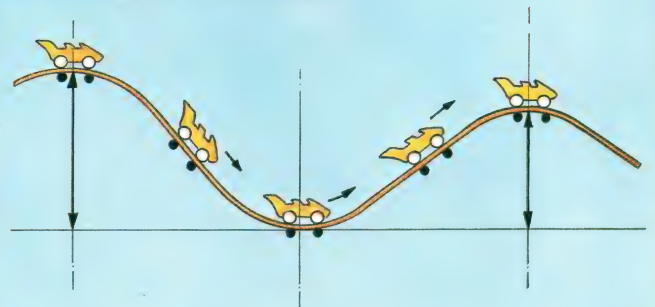


# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- ❑ Adventure-game technology
- ❑ The world's fastest ride
- ❑ Zoo breeding programmes
- ❑ Pocket-sized television
- ❑ Centrifugal and centripetal force
- ❑ Creating movie soundtrack thrills

## The Energy of Movement



- ❑ Microprocessors
- ❑ Theme parks

# LEISURE

# 31



# QUEST

## CONTENTS 31



### PLANET EARTH

#### AWAY DAYS

125-128

Leisure and theme parks – Walt Disney World – Project Zeri – Space Camp – controlled environments – the AstroDome and Superdome

### THE LIVING WORLD

#### WHERE WILD THINGS ARE

129-132

Zoo conservation schemes – ISIS and NOAH – a keeper's work – veterinary care – 'stereotyped' behaviour – new enclosure design – nature parks



### NEW TECHNOLOGY

#### WONDERWORLDS

189-192

Electronic games – powered chairs – laser discs – strategy and shoot-outs – 'virtual reality' – Eye-Phone and Power Glove – 'surround-sound'

#### TERROR RIDES

193-196

Wild roller-coasters – corkscrews and vertical loops – the forces of motion – steel and wood constructions – computerized safety bars

#### MONSTER MOVIES

197-198

Special-effects make-up – aging actors – making scars – screen blood – continuity illusions – stop-motion photography – cable-operated puppets

#### HI-TECH TOYS

199-200

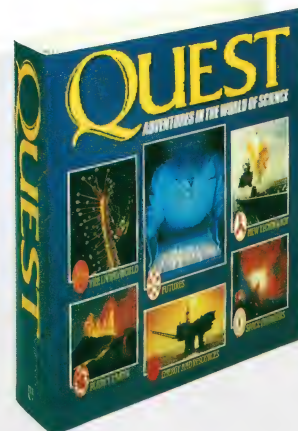
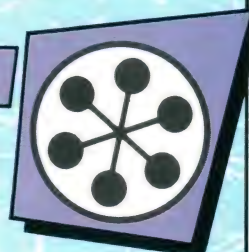
How radio-controlled models work – microprocessors and servos – computers-on-a-chip – a 'failsafe' system – CompuTrain

### FUTURES

#### MICRO SOUND AND VISION

95-96

Miniaturization technology – LCD screens – portable televisions – secrets of Private Eye – the smallest telephone – electronic organizers



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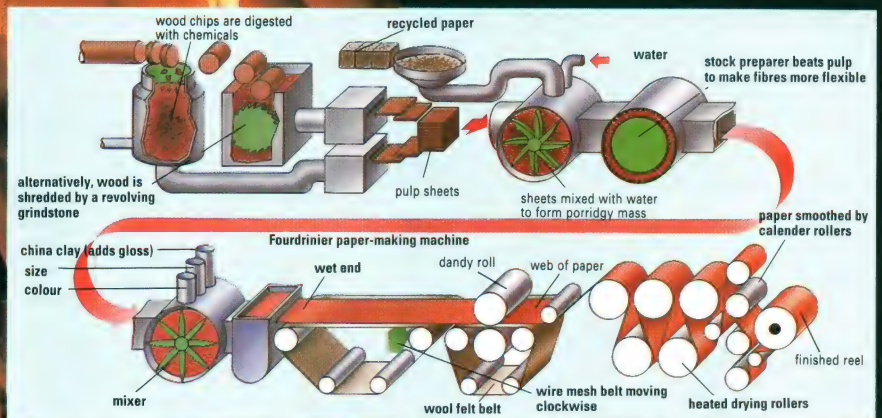
**SOUTH AFRICA & MALTA:** Back numbers are available through your newsagent.



# QUEST

## ADVENTURES IN THE WORLD OF SCIENCE

- Q Customized manufacturing
- Q Cells – the building blocks of life
- Q Super-fast freezing techniques
- Q Robots with 'eyes'
- Q The food chain
- Q Automation technology
- Q The work ethic
- Q Biodegradable plastic

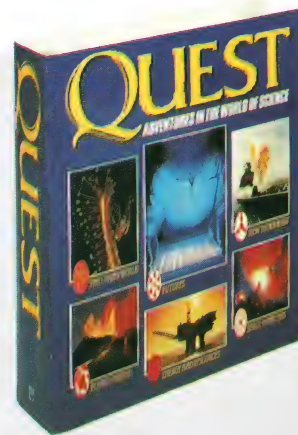


- Q Industries that work around the clock



# QUEST

## CONTENTS 32



### PLANET EARTH

#### WILL TO WORK

129-130

The labour force – approaches to management – teamwork – company loyalty – encouraging ambition – competition – training courses – promoting creative thought

### THE LIVING WORLD

#### BIOLOGICAL FACTORIES

133-134

The structure of cells – how plant and animal cells differ – nucleus: the control centre – different types of cell

### NEW TECHNOLOGY

#### NON-STOP PRODUCTION

201-204

Round-the-clock industries – power generators – oil refining – chemical and metal production – smelting – continuous casting of molten steel – paper-making – cement works – glass plants

#### AUTOMATION TECHNOLOGY

205-208

Computerized robots – robot arms – motorized joints – sensors – camera 'eyes' – Automatic Guided Vehicles – designing on computer

### FUTURES

#### MASS-MADE TO ORDER

97-98

Limitations of assembly lines – customizing mass-produced goods – optional extras for cars – automatic tailoring systems

### ENERGY AND RESOURCES

#### FOOD INDUSTRY

93-96

Ensuring hygiene – testing for bacteria – the 'cold chain' – homogenization – pasteurization – 'fresh' salad in tins – growing natural flavourings in the laboratory – super-fast freezing

#### RECYCLING

97-100

Separating scrap metal from other materials – re-using lead – extracting chemicals from old rubber tyres – bottle banks – new cans from old

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**Pack cover:** the control room of a steel-making plant (main image); robots weld car bodies on a production line. **Fact file cover:** casting steel; diagram of the paper-making process.

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# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- ☐ Air and sea rescue
- ☐ Tackling oil-rig fires
- ☐ Animals in danger
- ☐ The Space Shuttle Ejector
- ☐ The Ivory Trail of death
- ☐ The limits of human endurance
- ☐ Aircrash survival aids



Airport Foam Tender

- ☐ 'Superbugs' to devour oil slicks

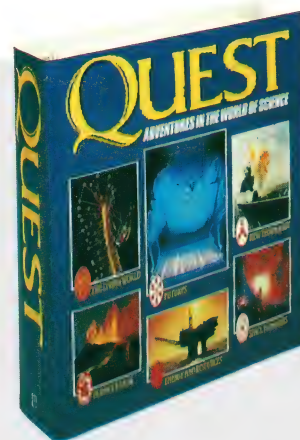
# RESCUE

# 33



# QUEST

## CONTENTS 33



### PLANET EARTH

#### OPERATION CLEAN-UP

131-132

Deadly oil spills – destruction of wildlife – polluted water – dispersant chemicals – laser 'torches' – skimmer ships – nuclear waste disposal – landfill sites

### THE LIVING WORLD

#### ANIMAL WATCH

135-138

Poaching – hunting the hunters – endangered plants and animals – the ivory trade – the tranquillizer dart – protection schemes – breeding species in captivity



### NEW TECHNOLOGY

#### ESCAPE!

209-212

Motorized ejection seats – airline crashes – oxygen masks – canvas chutes – life-jackets – inflatable dinghies

#### FIGHTING FIRE

213-216

Standpipes – turntable ladders – hydraulic platforms – mobile control unit – fire fighting tactics – 'firelines' – 'blow outs'

#### EMERGENCY SERVICES

217-220

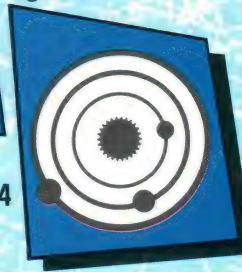
Ambulance crews – resuscitators – heart monitoring units – thermal imaging camera – mountain rescue – coastguards

### SPACE FRONTIERS

#### SPACE RESCUE

33-34

Stranded in Space – severed fuel lines – lunar 'lifeboat' – life support systems – filtering out CO<sub>2</sub> – repairing satellites

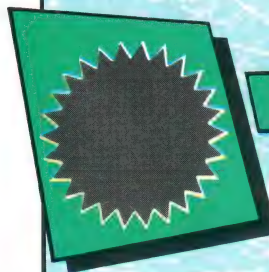


### ENERGY AND RESOURCES

#### BRAVING THE ELEMENTS

101-102

Extremes of temperature – dehydration – hypothermia – protective clothing – surviving in the sea – shark attack



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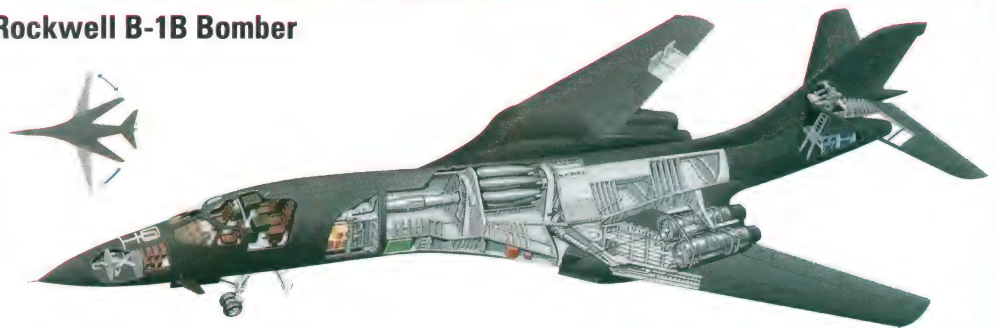


# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

- Q Patrolling the skies
- Q British Aerospace Harrier – the jet that flies backwards!
- Q Aerial battle tactics
- Q Microlights – the ultimate in small planes
- Q Short Take-off and Landing planes
- Q What do gliders and vultures have in common?

Rockwell B-1B Bomber



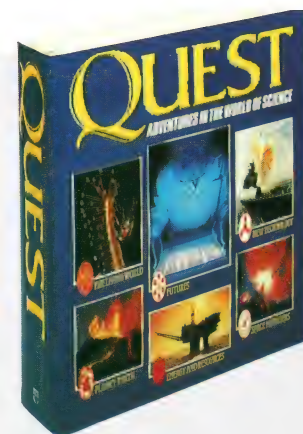
**FLIGHT II**

**34**



# QUEST

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## PLANET EARTH

### MAN-POWERED FLIGHT 133-136

Muscle power - new-generation machines - super-strong materials - battery-powered planes - staying airborne - breaking records

## NEW TECHNOLOGY

### VERTICAL TAKE-OFF 221-222

Vertical thrust - battle tactics - Short Take-off and Landing planes - generating extra lift - tilt-rotor aircraft

### AERIAL WARFARE 223-226

Military planes - Multi-purpose fighters - strategic bombers - radar tracking stations - dogfights - swing-wings.

### CIRCUS IN THE SKY 227-230

Split-second timing - high-performance jets - anti-G suits - aerobatics - spectacular smoke trails - dual stunts

### MICROLIGHTS 231-232

Fun flying - simple controls - small engines - cruising and stalling speeds - safety factors - stability - rotor blades

## FUTURES

### AIRPORT 2000 99-100

Air-traffic congestion - computerized check-in - robot baggage handlers - high-security systems - seadromes

## ENERGY AND RESOURCES

### RIDING ON AIR 103-106

Gliders - winch launching and towing - tracking thermals - parachute 'breaks' - manoeuvring a hang-glider - streamlined harnesses

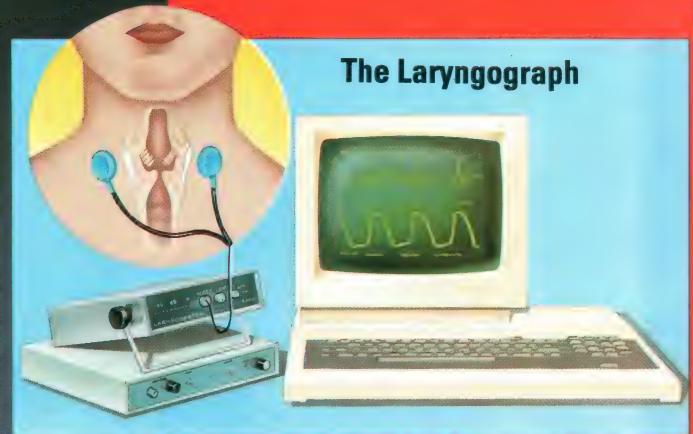
**Pack cover:** the RAF's display team - the Red Arrows (main picture); the cockchafer beetle (inset). **Fact file cover:** parachutist jumping off a mountainside; diagram of the Rockwell B-1B bomber.



# QUEST

ADVENTURES IN THE WORLD OF SCIENCE

Q Arctic and Antarctic – remote ice kingdoms



The Laryngograph

Q Earth's remotest regions

Q Investigating the paranormal

Q Probing the planets

Q Machines that 'see' inside the body

Q Is there life in Space?

Q Awesome creatures of the deep

INTO THE UNKNOWN

35



# QUEST

## CONTENTS 35



### PLANET EARTH

#### STRANGE WORLDS

137-140

Remote regions - mountain ranges - walls of ice - exploring oceans - submersibles - the deepest caves - dense jungles - frozen Arctic wastes

### THE LIVING WORLD

#### EARTHLY MONSTERS

139-142

Man-eating sharks - awesome 'devilfish' - giant squid - 'killer bees' - vampire bats - monster lizards - overcoming phobias



### NEW TECHNOLOGY

#### MEDICINE NOW

233-236

New equipment and techniques - the electron-beam microscope - seeing inside the body - monitoring healing - bandages made from seaweed

#### GHOSTBUSTING

237-238

Paranormal activity - psychokinetic 'energy' - the minilab - unexplained levitation - poltergeists - the laryngograph - telepathy - ghosts

### SPACE FRONTIERS

#### SPACE ODYSSEY

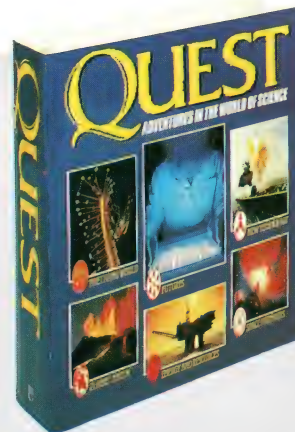
35-38

Voyager 2's journey to Neptune - ice volcanoes - pools of liquid hydrogen - Jupiter's dangerous magnetic field - lethal radiation - Saturn's rings - mapping Venus

#### LOOKING FOR LIFE

39-42

Interstellar messages - powerful radio telescopes - the beginnings of life - our vital Sun - searching for other galaxies



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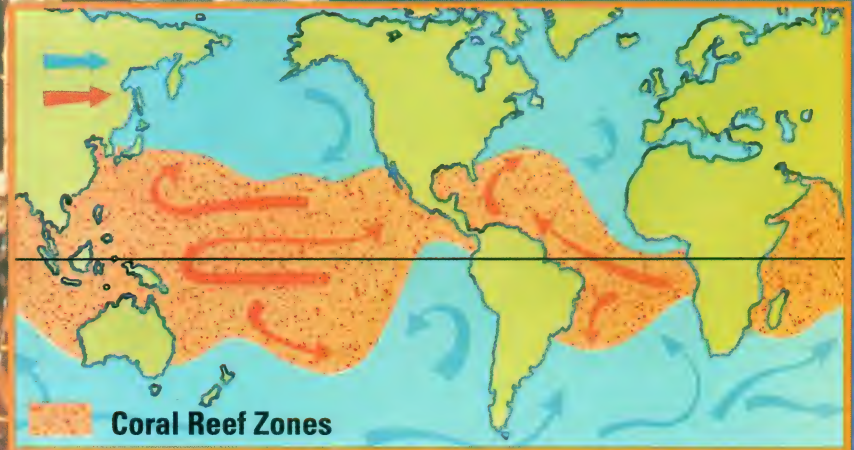
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**Pack cover:** an artist's impression of Voyager 2's journey to Neptune; researching into DNA. **Fact file cover:** the 76-metre diameter dish of Mark 1A - a radio telescope near Manchester, UK; diagram of a laryngograph.



# QUEST

ADVENTURES IN THE WORLD OF SCIENCE



- Q The revolutionary oil production ship
- Q Monster tugs
- Q Floating cranes
- Q How coral reefs are formed
- Q Collisions at sea
- Q The blue whale – largest mammal on Earth
- Q Inside a modern lighthouse

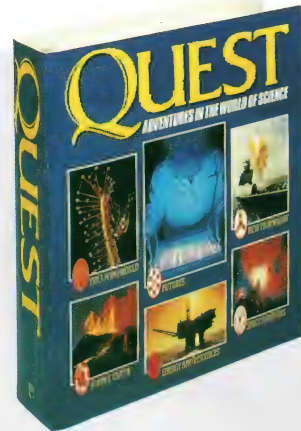
**OCEANS II**

**36**



# QUEST

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## PLANET EARTH

### CORAL REEFS

141-144

Structures made from limestone skeletons – life cycle of a coral polyp – types of reef – plant and fish life

## THE LIVING WORLD

### OCEAN GIANTS

143-146

Toothed and baleen whales – filtering food – blow-holes – using sonar – whale songs – commercial whaling techniques

## NEW TECHNOLOGY

### NAVIGATION

239-242

Autopilot – avoiding collisions – satellite navigation systems – accurate position fixes – distress signals – video maps of harbours – separation zones

### OIL SHIPS

243-246

Supertankers – oil spills – pollution – loading and unloading at sea – floating hoses – computerized controls

### OPERATION SALVAGE

247-250

Refloating stricken vessels – trawling for aircraft pieces – marine archaeology – locating sunken wrecks – sidescan sonar – salvage submarines

## FUTURES

### THE RISING SEAS

101-102

The Greenhouse Effect – rising sea levels – global warming – melting glaciers – erosion of beaches and river deltas – vulnerable islands

**Pack cover:** an oil tanker (top); a marine archaeologist recovering a pottery bowl (inset). **Fact file cover:** maintenance work on a buoy; diagram of coral reef areas of the world.





A Marshall Cavendish Discovery Collection

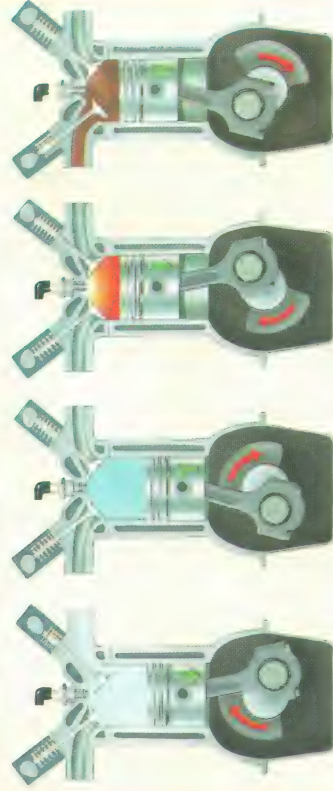
# QUEST

ADVENTURES IN THE WORLD OF SCIENCE



- Q Experiments in microgravity
- Q Super-efficient engines
- Q How plants trap the Sun's energy
- Q Machines made of atoms
- Q Constructing computer programs
- Q Hi-tech tidal barriers

The Four Stroke Engine



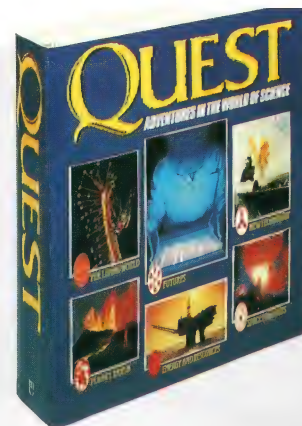
# ENGINEERING

# 37



# QUEST

## CONTENTS 37



### THE LIVING WORLD

#### GROWING STRUCTURES

147-148

Chlorophyll - trapping the Sun's energy - photosynthesis - root systems - aerial roots - reproduction - pollination

### NEW TECHNOLOGY

#### DAM-BUILDING

251-254

Reservoirs - irrigation - hydroelectric power stations - diverting a river - tidal barriers - sea dams - dam disasters

#### CAR CONSTRUCTION

255-258

Better road holding - 'lean-burn' engines - catalytic converters - turbocharging - supercharging - rear-wheel steering

#### ARMY ENGINEERS

259-260

Assembling portable bridge sections - building temporary roads and helipads - filling ditches

### SPACE FRONTIERS

#### Factories in Space

43-44

Advantages of microgravity - growing perfect crystals - researching proteins - perfectly curved shapes

### FUTURES

#### Microengineering

103-104

Nanotechnology - machines made of atoms - scanning-probe microscopes - the smallest greetings card

### ENERGY AND RESOURCES

#### Reclaiming the Land

107-110

Land below sea-level - draining marshlands - building dykes - the longest sea dam - new engineering techniques

#### Software Design

111-112

Software engineers - different programs - special languages - fail-safe devices - icons and 'earcons'

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**Fact file cover:** Eastern Scheldt barrier, Netherlands; diagram of a standard engine.

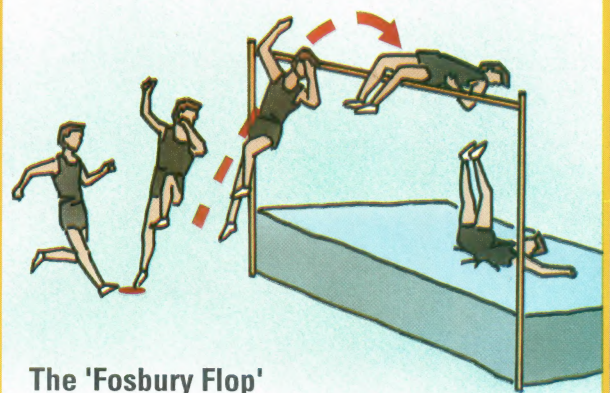


# QUEST

ADVENTURES IN THE WORLD OF SCIENCE



- ☐ Top-flight archery skills
- ☐ Shooting – calculating distance, trajectory and velocity
- ☐ Dynamics of the 'Fosbury flop'
- ☐ Weight divisions in boxing
- ☐ Tackling techniques
- ☐ Precision-crafted racing bikes
- ☐ Electronic timing devices
- ☐ Action in the pits



The 'Fosbury Flop'



# QUEST

## CONTENTS 38



### PLANET EARTH

#### SPEED ON SNOW

145-148

Competitive skiing – tight turns – fast runs – electronic timing – reducing drag – speed trials – steering a bobsleigh

### THE LIVING WORLD

#### THE HUNT

149-150

Training and breeding foxhounds – flushing out the fox – hare coursing – anatomy of a shotgun – bullfighting

#### POWER IN MOTION

151-154

Dynamics of jumping events – take-off and trajectory – main forces in throwing competitions – importance of build

### NEW TECHNOLOGY

#### PITSTOP

261-264

Specialized racing tyres – anti-skid tread – pneumatic spanners – emergency repairs – suspension adjustment

### ENERGY AND RESOURCES

#### ROUGH STUFF

113-116

Contact sports – speed and stamina – timing and tactics – offensive and defensive players – protective gear

#### SUPER CYCLING

117-118

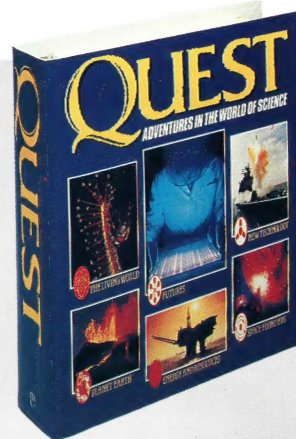
Precision-crafted machines – flexible frames – metal fatigue – lightweight accessories – track bikes – sprints

#### ON TARGET

119-120

Principles of good marksmanship – equipment guidelines – bows and arrows – Olympic shooting events

**Pack front cover:** a downhill racer (main picture); computer screen in a Formula One racing car. **Fact file cover:** speed skating; diagram of the 'Fosbury flop'



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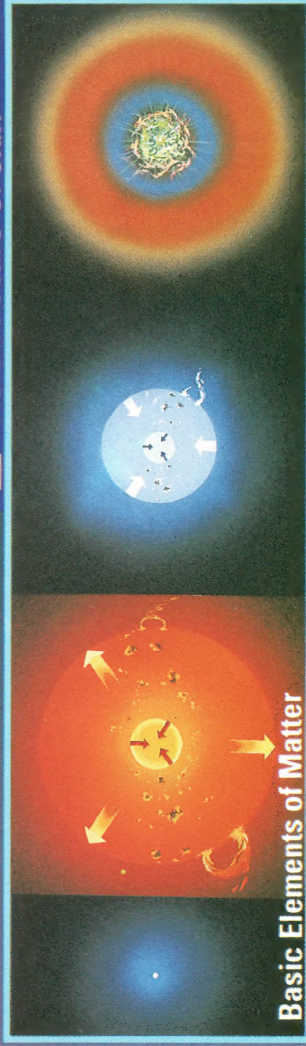
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# QUEST

ADVENTURES IN THE WORLD OF SCIENCE



Basic Elements of Matter

Q What makes plastic unique?

Q The structure of skin

Q Inside a modern sawmill

Q The science of ceramics

Q How acid rain affects the world's forests

Q Tracer materials in medicine, industry and scientific research

Q The timber trade

Q Alloys – metals made to measure



# MATERIALS

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# QUEST

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#### FANTASTIC PLASTIC

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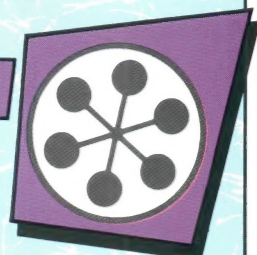
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#### METALS

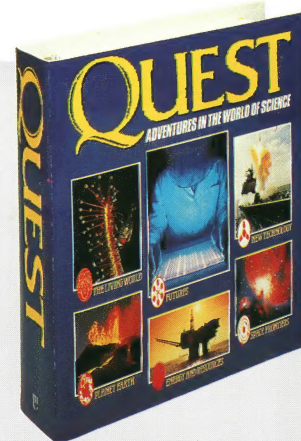
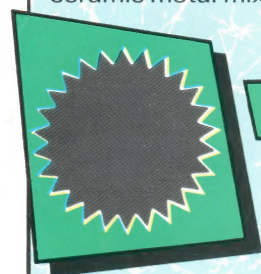
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**Pack front cover:** thick fur protects the polar bear from the Arctic cold; shaping hot plastic (main image), natural and synthetic diamonds (inset right). **Fact file cover:**